41.77.1 of the American Bureau of Shipping's ''Rules for Building and Classing Steel Vessels.''

(d) *Starting systems.* Automatic or remote starting system receivers, accumulators, and batteries must be automatically and continuously charged.

(e) *Assistance-needed alarm.* The engineer's assistance-needed alarm (see subpart 113.27 of this chapter) must annunciate if—

(1) An alarm at the ECC is not acknowledged in the period of time necessary for an engineer to respond at the ECC from the machinery spaces or engineers' accommodations; or

(2) An ECC alarm system normal power supply fails.

(f) *Remote alarms.* ECC alarms for vital systems that require the immediate attention of the bridge watch officer for the safe navigation of the vessel must be extended to the bridge. All ECC alarms required by this part must be extended to the engineers' accommodations. Other than fire or flooding alarms, this may be accomplished by summarized visual alarm displays.

(g) *ECC alarms.* All requirements of this part for system or equipment monitoring must be met by providing both displays and alarms at the ECC.

(h) *Fire control station.* A control station for fire protection of the machinery spaces must be provided outside the machinery spaces. At least one access to this station must be independent of category A machinery spaces, and any boundary shared with these spaces must have an A–60 fire classification as defined in §72.05 of this chapter. Except where such an arrangement is not possible, control and monitoring cables and piping for the station must not adjoin or penetrate the boundaries of a category A machinery space, uptakes, or casings. The fire control station must include—

(1) Annunciation of which machinery space is on fire;

(2) Control of a fire pump required by this chapter to be independent of the main machinery spaces;

(3) Controls for machinery space fixed gas fire extinguishing systems;

(4) Control of oil piping positive shutoff valves located in the machinery spaces and required by §56.50–60(d);

(5) Controls for machinery space fire door holding and release systems, skylights and similar openings;

(6) The remote stopping systems for the machinery listed in §111.103 of this chapter; and

(7) Voice communications with the bridge.

(i) *Oil leakage.* Leakages from high pressure fuel oil pipes must be collected and high levels must be alarmed at the ECC.

(j) *Maintenance program.* The maintenance program of §62.50–20(h) must include a checkoff list to make sure that routine daily maintenance has been performed, fire and flooding hazards have been minimized, and plant status is suitable for unattended operation. Completion of this checkoff list must be logged before leaving the plant unattended.

(k) *Continuity of electrical power.* The electrical plant must meet sections 41.75.1 and 41.75.3 of the American Bureau of Shipping's ''Rules for Building and Classing Steel Vessels'' and must—

(1) Not use the emergency generator for this purpose;

(2) Restore power in not more than 30 seconds; and

(3) Account for loads permitted by §111.70–3(f) of this chapter to automatically restart.

[CGD 81–030, 53 FR 17838, May 18, 1988; 53 FR 19090, May 26, 1988]

PART 63—AUTOMATIC AUXILIARY BOILERS

Subpart 63.01—General Provisions

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63.01–3 Scope and applicability.

Subpart 63.05—Reference Specifications

63.05–1 Incorporation by reference.

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63.10–1 Test procedures and certification report.

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63.15–3 Fuel system.
63.15–5 Strainers.
63.15–7 Alarms.
63.15–9 Inspections and tests.

Subpart 63.20—Additional Control System Requirements

Subpart 63.25—Requirements for Specific Types of Automatic Auxiliary Boilers

AUTHORITY: 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 88–057, 55 FR 24238, June 15, 1990, unless otherwise noted.

Subpart 63.01—General Provisions

§ 63.01–1 Purpose.

This part specifies the minimum requirements for safety for each automatic auxiliary boiler, including its design, construction, testing, and operation.

§ 63.01–3 Scope and applicability.

(a) This part contains the requirements for automatic auxiliary boilers, including their controls, control system components, electrical devices, safety devices, and accessories. Types of automatic auxiliary boilers which are covered include large and small automatic auxiliary boilers, automatic heating boilers, automatic waste heat boilers, donkey boilers, miniature boilers, electric boilers, fired thermal fluid heaters, automatic incinerators, and electric hot water supply boilers. Automatic auxiliary boilers are classified by their service, control systems, pressure and temperature boundaries, heat input ratings, and firing mediums as follows:

(1) Automatic auxiliary boilers listed in Table 54.01–5(A) of this chapter which reference this part for regulation of their automatic controls.

(2) Automatic control systems for automatic auxiliary boilers having a heat input rating of less than 12,500,000 Btu/hr. (3.66 megawatts).

(3) Electric hot water supply boilers (heaters) containing electric heating elements rated at 600 volts or less.

(4) Exhaust gas boilers, and their controls and accessories used to heat water and/or generate steam.

(5) Incinerators (and their control systems) used for the generation of steam and/or oxidation of ordinary waste materials and garbage. This part also includes incinerators which serve as automatic auxiliary boilers.

(6) Fired thermal fluid heaters and their controls.

(b) *Exceptions.* Automatic boilers having heat input ratings of 12,500,000 Btu/hr. (3.66 megawatts) and above must meet the requirements of part 52 of this chapter. Their control systems must meet the requirements of part 62 of this chapter. Electric cooking equipment must comply with §111.77–3 of this chapter. Electric oil immersion heaters must comply with part 111, subpart 111.85 of this chapter. Electric air heating equipment must comply with part 111, subpart 111.87 of this chapter.

[CGD 88–057, 55 FR 24238, June 15, 1990, as amended by USCG–2002–13058, 67 FR 61278, Sept. 30, 2002; USCG–2004–18884, 69 FR 58346, Sept. 30, 2004]

Subpart 63.05—Reference Specifications

§ 63.05–1 Incorporation by reference.

(a) Certain materials are incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than the one listed in paragraph (b) of this section, notice of change must be published in the FEDERAL REGISTER and the material made available to the public. All approved material is on file at the U.S. Coast Guard, Office of Design and Engineering Standards (G-MSE), 2100 Second Street SW., Washington, DC 20593–0001, and is available from the sources listed in paragraph (b) of this section or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(b) The material approved for incorporation by reference in this part and the sections affected are:

American Society of Mechanical Engineers (ASME) International

Three Park Avenue, New York, NY 10016–5990

ANSI/ASME CSD–1–1982 with Addenda CSD-la-1984, Controls and Safety Devices for Automatically Fired Boilers, November 15, 1984....63.10–1; 63.15–1; 63.20

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM F 1323–98, Standard Specification for Shipboard Incinerators.....63.25–9

International Maritime Organizations (IMO)

Publications Section, 4 Albert Embankment, London, SE1 7SR United Kingdom

Resolution MEPC.59(33), Revised Guidelines for the Implementation of Annex V of MARPOL 73/78.....63.25–9

International Organization for Standardization

Case postale 56, CH–1211, Geneve 2009

Shipbuilding-Shipboard Incinerators-Requirements, 13617 (1995).....63.25–9

Underwriters' Laboratories, Inc. (UL)

12 Laboratory Drive, Research Triangle Park, NC 27709–3995

ANSI/UL–174, Standard for Household Electric Storage Tank Water Heaters, Seventh Edition, April 18, 1983 (Revisions through March 1988) 63.25–3

ANSI/UL–296, Standard for Oil Burners, Seventh Edition, August 22, 1980 (Revisions through August 1985) 63.15–5

ANSI/UL–343, Standard for Pumps for Oil Burning Appliances, Sixth Edition, July 17, 1986.....63.15–5

ANSI/UL–1453, Standard for Electric Booster and Commercial Storage Tank Water Heaters, Third Edition, February 5, 1988.....63.25–3

American Gas Association

1515 Wilson Boulevard, Arlington, Virginia 22209

ANSI/AGA Z21.22–86 Relief Valves and Automatic Shutoff Devices for Hot Water Supply Systems, March 28, 1986.....63.25–3

[CGD 88–057, 55 FR 24238, June 15, 1990, as amended by CGD 95–072, 60 FR 50463, Sept. 29, 1995; CGD 96–041, 61 FR 50728, Sept. 27, 1996; CGD 97–057, 62 FR 51044, Sept. 30, 1997; CGD 95–028, 62 FR 51202, Sept. 30, 1997; USCG–1999–6216, 64 FR 53225, Oct. 1, 1999; USCG–1999–5151, 64 FR 67180, Dec. 1, 1999]

Subpart 63.10—Miscellaneous Submittals

§ 63.10–1 Test procedures and certification report.

Two (2) copies of the following items must be submitted. Visitors may deliver them to the Commanding Officer, U.S. Coast Guard Marine Safety Center, 1900 Half Street, SW., Suite 1000, Room 525, Washington, DC 20024, or they may be transmitted by mail to Commanding Officer, U.S. Coast Guard Marine Safety Center, JR10–0525, 2100 2nd Street, SW., Washington, DC 20593, in a written or electronic format. Information for submitting the VSP electronically can be found at *http://www.uscg.mil/HQ/MSC.*

(a) Detailed instructions for operationally testing each automatic auxiliary boiler, its controls, and safety devices.

(b) A certification report for each automatic auxiliary boiler which:

(1) Meets paragraph CG–510 of ANSI/ASME CSD–1a; and

(2) Certifies that each automatic auxiliary boiler, its controls, and safety devices comply with the additional requirements of this part.

[CGD 88–057, 55 FR 24238, June 15, 1990, as amended by USCG–2007–29018, 72 FR 53965, Sept. 21, 2007]

Subpart 63.15—General Requirements

§ 63.15–1 General.

(a) Each automatic auxiliary boiler must be designed and constructed for its intended service according to the requirements of the parts referenced in § 54.01–5, Table 54.01–5(A) of this chapter.

(b) Controls and safety devices for automatic auxiliary boilers must meet the applicable requirements of ANSI/ASME CSD–1/CSD–1a, except Paragraph CG–310.

(c) All devices and components of an automatic auxiliary boiler must satisfactorily operate within the marine environment. The boiler must satisfactorily operate with a momentary roll of 30°, a list of 15°, and a permanent trim of 5° with it installed in a position as specified by the manufacturer.

(d) An electrical control used to shut down the automatic auxiliary boiler must be installed in accordance with §58.01–25 of this chapter. This device must stop the fuel supply to the fuel burning equipment.

(e) Mercury tube actuated controls are prohibited from being installed and used on automatic auxiliary boilers.

§ 63.15–3 Fuel system.

(a) Firing of an automatic auxiliary boiler by natural gas is prohibited unless specifically approved by the Marine Safety Center.

(b) Heated heavy fuel oil may be used provided the heaters are equipped with a high temperature limiting device that shuts off the heating source at a temperature below the flashpoint of the oil and is manually reset. When a thermostatically-controlled electric oil heater and a level device is used, it must meet the requirements of part 111, subpart 111.85 of this chapter.

NOTE: An auxiliary boiler may be safely ignited from the cold condition using unheated diesel or light fuel oil and subsequently shifted to heated heavy fuel.

(c) The fuel oil service pump and its piping system must be designed in accordance with §56.50–65 of this chapter. All materials must meet the requirements of part 56, subpart 56.60 of this chapter. The use of cast iron or malleable iron is prohibited.

(d) The fuel oil service system (including the pump) must meet the pressure classification and design criteria found in §56.04–2, Table 56.04–2 of this chapter.

(e) When properly selected for the intended service, fuel pumps meeting the performance and test requirements of ANSI/UL 343 meet the requirements of this section.

§ 63.15–5 Strainers.

(a) Strainers must be installed in the fuel supply line. Each strainer must be self-cleaning, fitted with a bypass, or be capable of being cleaned without interrupting the fuel oil supply.

(b) The strainer must not allow a quantity of air to be trapped inside which would affect the rate of fuel flow to the burner or reduce the effective area of the straining element.

(c) The strainer must meet the requirements for strainers found in ANSI/UL 296 and the requirements for fluid conditioner fittings found in §56.15–5 of this chapter.

§ 63.15–7 Alarms.

(a) An audible alarm must automatically sound when a flame safety system shutdown occurs. A visible indicator must indicate that the shutdown was caused by the flame safety system.

(b) Means must be provided to silence the audible alarm. The visible indicators must require manual reset.

(c) For steam boilers, operation of the lower low water cutoff must automatically sound an audible alarm. A visual indicator must indicate that the shutdown was caused by low water.

(d) For a periodically unattended machinery space, the auxiliary boiler trip alarm required by 46 CFR 62.35–50, Table 62.35–50 satisfies the requirements for the audible alarms specified in this section.

§ 63.15–9 Inspections and tests.

All automatic auxiliary boilers must be inspected and tested in accordance with the requirements of part 61 of this chapter.

Subpart 63.20—Additional Control System Requirements

§ 63.20–1 Specific control system requirements.

In addition to the requirements found in ANSI/ASME CSD–1/CSD–1a, the following requirements apply for specific control systems:

(a) *Primary safety control system.* Following emergency safety trip control operation, the air flow to the boiler must not automatically increase. For this condition, postpurge must be accomplished manually.

(b) *Combustion control system.* A low fire interlock must ensure low fire

start when variable firing rates are used.

(c) *Water level controls and low water cutoff controls.* Water level controls must be constructed and located to minimize the effects of vessel roll and pitch. Float chamber low water cutoff controls using stuffing boxes to transmit the motion of the float from the chamber to the external switches are prohibited. No outlet connection other than pressure controls, water columns, drains, and steam gages may be installed on the float chamber or on the pipes connecting the float chamber to the boiler. The water inlet valve must not feed water into the boiler through the float chamber. The boiler feed piping must comply with the applicable requirements of §56.50–30 of this chapter.

Subpart 63.25—Requirements for Specific Types of Automatic Auxiliary Boilers

§63.25–1 Small automatic auxiliary boilers.

Small automatic auxiliary boilers, defined as having a heat input rating of 400,000 Btu/hr. and less (117 kilowatts and less) (3 gph and less), must meet the following additional requirements.

(a) Small automatic auxiliary boilers must be equipped with a visual indicator which indicates when the low water cutoff has activated.

(b) A prepurge period of a sufficient duration to ensure at least four changes of air in the combustion chamber and stack, but not less than 15 seconds must be provided. Ignition must occur only before or simultaneously with the opening of the fuel oil valve.

§63.25–3 Electric hot water supply boilers.

(a) Electric hot water supply boilers which have a capacity not greater than 454 liters (120 U.S. gallons), a heat input rate not greater than 200,000 Btu/hr. (58.6 kilowatts), meet the requirements of ANSI/UL 174 or ANSI/UL 1453, and are protected by the relief device(s) required in §53.05–2 of this chapter do not have to meet any other requirements of this section except the periodic testing required by paragraph (j) of this section. Electric hot water supply boilers which meet the requirements of UL 174 may have temperature-pressure relief valves that meet the requirements of ANSI/AGA Z21.22 in lieu of subpart 53.05 of this chapter.

(b) Each hot water supply boiler must be constructed in accordance with the applicable requirements of part 52 or part 53 of this chapter.

(c) Branch circuit conductors for hot water supply boilers which have a capacity not greater than 454 liters (120 U.S. gallons) must have a current carrying capacity of not less than 125 percent of the current rating of the appliance. Branch circuit conductors for hot water supply boilers with capacities of more than 454 liters (120 U.S. gallons) must have a current carrying capacity of not less than 100 percent of the current rating of the appliance. Wiring materials and methods must comply with part 111, subpart 111.60 of this chapter. A hot water supply boiler having a current rating of more than 48 amperes and employing resistance type heating elements must have the heating elements on subdivided circuits. Each subdivided load, except for an electric hot water supply boiler employing a resistance type immersion electric heating element, must not exceed 48 amperes, and it must be protected at not more than 60 amperes. An electric hot water supply boiler employing a resistance type immersion electric heating element may be subdivided into circuits not exceeding 120 amperes and protected at not more than 150 amperes. Overcurrent protection devices must comply with part 111, subpart 111.50 of this chapter.

(d) Heating elements must be insulated electrically from the water being heated, guarded against mechanical injury and contact with outside objects, and securely supported. Consideration must be given to sagging, opening, and other adverse conditions of the elements resulting from continuous heating, and flexion of supports and wiring due to alternate heating and cooling. Wrap-around elements must be secured in a manner which prevents loosening.

(e) Iron and steel parts must be protected against corrosion by enameling, galvanizing, or plating. Iron and steel storage tanks having a wall thickness less than 6.4mm (¼-inch) must have

the inside surface protected against corrosion.

(f) Each heating element must have a temperature regulating device. The device must limit the water from obtaining a temperature greater than 90 °C (194 °F). If the control has a marked off position, the control must disconnect the heating element from all ungrounded conductors, and it must not respond to temperature when placed in the off position.

(g) An independent temperature limiting device must prevent the water in the upper 25 percent of the tank from attaining a temperature higher than 99 °C (210 °F). This device must require manual resetting, be trip free from the operating means, open all ungrounded power supply conductors to the heater, and be readily accessible.

(h) Electric hot water supply boilers must have pressure and temperature relieving valves. The valve temperature setting must not be more than 99 °C (210 °F). The pressure relief setting must not be higher than the marked working pressure of the boiler. The pressure and temperature relief valves must meet part 53, subpart 53.05 of this chapter. The pressure and temperature relief valves may be combined into a pressure-temperature relief valve.

(i) Electric hot water supply boilers must be marked in a visible location with the manufacturer's name, model or other identification number, water capacity, and the electrical ratings of each heating element. When two or more heating elements are installed, the maximum wattage or current consumption must be indicated. The cold water inlet and the hot water outlet must each be clearly distinguished or marked for identification purposes.

(j) All electric hot water supply boilers must have their pressure relief devices tested as required by part 52 or part 53 of this chapter, as applicable. Electric hot water supply boilers which meet the requirements of ANSI/UL 174 or ANSI/UL 1453 and have heating elements, temperature regulating controls, and temperature limiting controls are satisfactory for installation and service without further installation testing. All electric hot water supply boilers not meeting the requirements of ANSI/UL 174 or ANSI/UL 1453 must have their heating elements, temperature regulating controls, and temperature limiting controls tested by the marine inspector at the time of installation.

[CGD 88–057, 55 FR 24238, June 15, 1990, as amended by CGD 95–028, 62 FR 51202, Sept. 30, 1997]

§ 63.25–5 Fired thermal fluid heaters.

(a) *Construction.* Fired thermal fluid heaters must meet the requirements of part 52 of this chapter, as applicable.

(b) *Controls.* Fired thermal fluid heaters must have a low fluid level cutout device or a low flow device. When the rate of fluid flow through the heating coils is insufficient to ensure proper heat transfer, the device must cut off the fuel supply to the burner. If the fluid temperature exceeds the designed maximum operating temperature, a high temperature limit device must cut off the fuel supply to the burner. These devices must be of the manual reset type.

§ 63.25–7 Exhaust gas boilers.

(a) *Construction.* An auxiliary exhaust gas boiler must meet the applicable construction requirements of part 52 or part 53 of this chapter as determined from § 54.01–5, Table 54.01–5(A) of this chapter.

(b) *Controls.* Each drum type exhaust gas steam boiler must have a feed water control system. The system must automatically supply the required amount of feed water and maintain it at the proper level. For boilers without a fixed water level, the control system must supply the feed water at a rate sufficient to ensure proper heat transfer. The system must adequately fill the boiler when cold.

(c) *Alarms.* When a condition arises which results in inadequate heat transfer, a high temperature alarm or low flow alarm must be activated. An audible alarm must automatically sound, and a visual indicator must indicate when the fluid temperature exceeds the maximum operating temperature or when the fluid/steam flowing through the heat exchanger is insufficient to ensure proper heat transfer. Additionally, an audible alarm must automatically sound, and a visual indicator must indicate when a soot fire is

present in the exhaust gas boiler's uptake.

§63.25–9 Incinerators.

Incinerators installed on or after March 26, 1998 must meet the requirements of IMO resolution MEPC.59(33). Incinerators in compliance with ISO standard 13617 (1995), ''Shipbuilding-Shipboard Incinerators-Requirements'' are considered to meet the requirements of IMO resolution MEPC.59(33). Incinerators in compliance with both ASTM F 1323 (incorporated by reference, see §63.05–1), ''Standard Specifications for Shipboard Incinerators'' and Annexes A1–A3 of IMO resolution MEPC.59(33) are considered to meet the requirements of IMO resolution MEPC.59(33).

[CGD 95–028, 62 FR 51202, Sept. 30, 1997, as amended by USCG–1999–5151, 64 FR 67181, Dec. 1, 1999]

PART 64—MARINE PORTABLE TANKS AND CARGO HANDLING SYSTEMS

Subpart A—General

Subpart B—Standards for an MPT

Subpart C—Pressure Relief Devices and Vacuum Relief Devices for MPTs

Subpart D [Reserved]

Subpart E—Periodic Inspections and Tests of MPTs

Subpart F—Cargo Handling System

AUTHORITY: 46 U.S.C. 3306, 3703; 49 U.S.C. App. 1804; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 73–172, 39 FR 22950, June 25, 1974, unless otherwise noted.

Subpart A—General

§64.1 Purpose.

This part contains the requirements for—

(a) Design, construction, repair, alteration, and marking of marine portable tanks (MPTs) authorized by this chapter to be carried on inspected vessels;

(b) Periodic inspections and tests of MPTs; and

(c) Design and construction of cargo-handling systems for MPTs and other portable tanks authorized under subparts 98.30 and 98.33 of this chapter.

[CGD 84–043, 55 FR 37409, Sept. 11, 1990; 55 FR 47477, Nov. 14, 1990]